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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,633	09/29/2003	Daisaburou Nakai	Q77670	6242

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EXAMINER	
DINH, DUC Q	

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/671,633	NAKAI ET AL.	
	Examiner	Art Unit	
	DUC Q. DINH	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *13-33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,10 and 11* is/are rejected.

7)☒ Claim(s) *2-5,7-9 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/29/03,2/16/06*.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species:

Species I, Fig. 4 - Fig. 20

Species II, Fig. 21- Fig. 22.

Species III, Fig. 23 – Fig. 24.

The species are independent or distinct because they disclose different inventions.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

2. During a telephone conversation with Howard Bernstein on May 15, 2006 a provisional election was made without traverse to prosecute the invention of Spices I, claims 1-12. Affirmation of this election must be made by applicant in replying to this Office action. Claims

13-33 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

5. The information disclosure statements (IDSs) submitted on September 29, 2003 and February 16, 2006 are being considered by the examiner.

Claim Objections

6. Claims 1 and 4 are objected to because of the following informalities:

Claim1 "scan line" in line 3 should read, "scan lines".

Claim 4, "output" in line 2 should read "output circuit"

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurashima et al. (U.S Patent No. 6,954,184), hereinafter Kurashima, in view of Nakagaki et al. (U.S Patent No. 6,104,370).

In reference to claim 1, Kurashima discloses an apparatus for driving a plurality of display units in a mobile electronic apparatus (col. 1, lines 62-65; Fig. 6), each including a plurality of data lines (15a, 15c), a plurality of scan lines (15b, 15d) and a plurality of pixels (75) each provided at one of said data lines and one of said scan lines (col. 11, lines 47-50), comprising:

at least one of a common data driver circuit (67a) and a common scan driver circuit (a data-line drive IC 67a and scanning-line drive ICs 67b are provided. The scanning-line drive ICs 67b are provided at both sides of the IC mounting area (one for each side), while the data-line drive IC 67a is provided therebetween. The data-line drive IC 67a supplies image signals to the line wires 73 of the main display 1B and to the line wires 83 of the sub-display 2B. The scanning-line drive ICs 67b supply scanning signals to the second electrodes 15b of the main display 1B and to the fourth electrodes 15d of the sub-display 2B; col. 13, lines 14-23).

Accordingly, Kurashima discloses everything except said common data driver circuit including a plurality of first switch groups, each first switch group being connected to the data

lines of one of said display units for driving the data lines of said one of said display units, said common scan driver circuit including a plurality of second switch groups, each second switch group being connected to the scan lines of one of said display units for driving the scan lines of said one of said display units.

Nakagaki discloses first switch groups (33b) each first switch group being connected to the data lines (35) of the said display (31) for driving the data lines of the display 31, and a second switch groups (42), each second switch group being connected to the scan lines (34) of display unit (31) for driving the scan lines of said display unit (31; Fig. 6; col. 5, lines 9-18).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the first switch groups for driving data lines of one of the display and second switch groups in the displays of Kurashima as taught by Nakagaki because the first switch groups would control the output of the video signals to the signal lines and the second switch groups would control the output of the scanning signal provide for the gate lines of the display units (col. 5, lines 9-18 of Nakagaki).

In reference to claim 11, Nakagaki discloses the scan driver 41 further includes a plurality of fourth switch groups (43) each fourth switch group being connected to the scan lines (34) of said display units for supplying an off-level voltage to the scan lines of the display unit (31) (col. 5, lines 63-67 and col. 6, lines 1-3 of Nakagaki).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the switch groups (43) to turn off the level voltage to the scan lines of the display unit in the device of Kurashima because it would provide a switch group to turn off the signal provide

to the scan lines when the display is set in the right scanning mode (col. 5, lines 63-67 and col. 6, lines 1-3 of Nakagaki).

9. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurashima and Nakagaki as applied to claims 1 and 11 above, and further in view of Ohtani et al. (U.S Patent No 6,826,014).

In reference to claim 6, the combination of Kurashima and Nakagaki discloses everything except the data driver circuit comprises a shift register circuit for shifting a horizontal start signal in accordance with a horizontal clock signal; a line memory, connected to said shift register circuit, for storing one line data in accordance with said shift register circuit; a gradation voltage generating circuit; a decoder circuit, connected to said line memory and said gradation voltage generating circuit, for selecting gradation voltages from said gradation voltage generating circuit in accordance with output signals of said line memory; and an output circuit, connected between said decoder circuit and said first switch groups, for transmitting said selected gradation voltages to said first switch groups, so that said selected gradation voltages are transmitted to the data lines of one of said display units in accordance with the operations of said first switch groups.

Ohtani discloses a data driver (300 in Fig. 1) comprising a shift register circuit (301) for shifting a horizontal start signal (STR) in accordance with a horizontal clock signal (CL); a line memory (302) connected to said shift register circuit (301), for storing one line data in accordance with said shift register circuit (301); a gradation voltage generating circuit (200); a decoder circuit (304), connected to said line memory (302) and said gradation voltage generating circuit (200), for selecting gradation voltages from said gradation voltage generating circuit in

accordance with output signals of said line memory (302); and an output circuit (305), connected between said decoder (304) for transmitting said selected gradation voltages so that said selected gradation voltages are transmitted to the data lines of one of said display units (see Fig. 1, col. 7, lines 1-64).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the common data driver (300) in the combination of Kurashima and Nakagaki as taught by Ohtani because it would provide a high-quality display, and reliability of a liquid crystal can be enhanced (col. 1, lines 20-25).

In reference to claim 10, the combination of Kurashima and Nakagaki discloses everything except the scan driver comprising a shift register circuit for shifting a vertical start signal in accordance with a vertical clock signal and an output circuit, connected to said shift register circuit, for transmitting output signals of said shift register circuit to said second switch groups, so that the scan lines of one of said display units are sequentially scanned by said second switch groups.

Ohtani discloses a scan driver circuit (400; Fig. 1) comprising a shift register circuit for shifting a vertical start signal (GST) in accordance with a vertical clock signal (GCL) and an output circuit, connected to said shift register circuit for transmitting output signals of said shift register circuit to the scan lines (Fig. 1; col. 7, lines 65-67 and col. 8, lines 1-9).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the use of the shift register circuit and output circuit in the combination of Kurashima and Nakagaki as taught by Ohtani thereby the TFTs connected to each gate line successively turn

ON, the display data signal supplied to each data line from of the data driver is supplied to the liquid crystal display pixel, and an image display operation is performed (col. 8, lines 4-10).

Allowable Subject Matter

10. Claims 2-5, 7-9 and 12 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: none of the cited arts teaches or suggests:

said common data driver circuit comprises: a plurality of frame memories for storing video signals, each for one of said display units; a plurality of third switch groups each group being connected to one of said frame memories and being operated in synchronization with operations of said first switch groups (claim 2).

said gradation voltage generating circuit comprises a plurality of gradation voltage generating units each for one of said display units (claim 7).

"a plurality of first switches each connected to one of said voltage followers; and a plurality of second switches each connected between an input of one of said voltage followers and an output of one of said first switches, wherein said first switches are turned ON for a first predetermined time period, and then, said second switches are turned ON while said first switches are turned OFF (claim 8).

frequency control circuit, connected to said fifth and sixth switch groups, for selecting and turning ON one switch of said fifth switch group and one switch of said sixth switch group, so that the data lines of said one of said display units are driven by a selected one of said horizontal clock signals and the scan lines of said one of said display units are driven by a selected one of said vertical clock signals, thus always realizing a definite frame frequency of said one of said display units (claim 12).

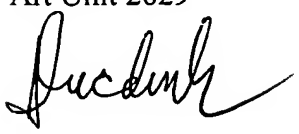
Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUC Q DINH whose telephone number is (571) 272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DUC Q DINH
Examiner
Art Unit 2629



DQD
June 8, 2006